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Electrical World

News Issue

APRIL 19, 1947

McGregor Smith, President of the Florida Power & Light Co., Miami, Fla., Who Has Been Elected President of the Southeastern Electric Exchange

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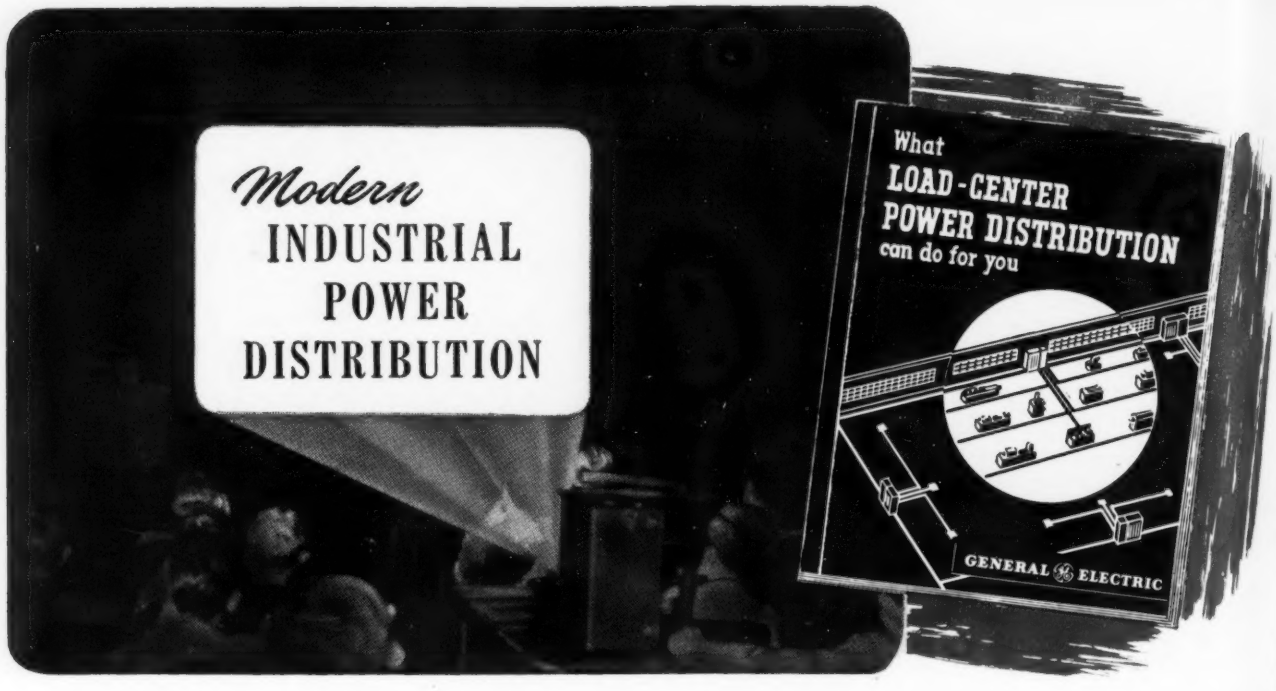


Announcing ANOTHER MPA* PROGRAM

DIRECTED TOWARD A MORE EFFICIENT USE OF ELECTRIC POWER

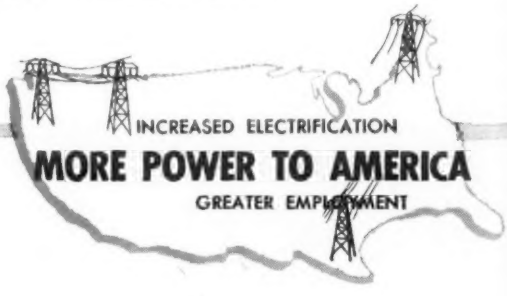
This new MPA program is about your industrial customer's own electrical system. It dramatizes with simple terms and diagrams, how the reliability and flexibility of his electrical system can be improved most economically. This, in turn, will be a big factor in determining the *amount* of power which industry can eventually utilize most effectively.

The program has been designed to aid in selling the idea of *modern* industrial power distribution—one of the first steps that must be taken in providing for the most effective utilization of electric service. It consists of three parts: (1) A manual for the power sales engineer, distribution engineer, and plant engineer with comprehensive technical data on load-center distribution. (2) A full-color sound slide film that will act as the focal point for successful sales meetings, where many potential customers can be approached at one time. (3) A booklet, "What Load-center Power Distribution Can Do For You," which will give the film audience a ready reference for much of the information in the film. The manual also contains valuable ideas for the preparation and presentation of the program.

A VITAL LINK IN ELECTRICAL POWER DISTRIBUTION

Vast sums of money have been spent in developing electrical generating plants and distribution systems to their present high level of efficiency and performance. This has been most important in bringing more power to America. However, it must not be forgotten that all of the electrical power used in American industry must get to the job via the electrical systems owned and maintained by the consumers within their own plants. It is this link in the power distribution chain, more than any other, that needs attention if American industry is to continue its march to more goods for more people at less cost.

Your local General Electric representative will be glad to give you further information on how you can present this program to your power sales engineers and to industrial groups in your area. *Apparatus Dept., General Electric Company, Schenectady 5, N. Y.*



***More Power to America is a co-operative, look-ahead program designed to increase the productivity—and earning power—of Americans at their jobs. It aims to do this by providing the "tell-how" and "show-how" that will stimulate broader, more efficient use of electricity in production.**

GENERAL ELECTRIC

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ELECTRICAL WORLD

NEWS ISSUE

VOLUME 127 NUMBER 16

APRIL 19, 1947

Texas Power & Light and SPA Agree on Denison Dam Energy

Sign 20-Year Contract Giving SPA Use of Company Lines to Serve Customers in Texas and Making Substantial Part of Denison Output Available to Utility for Own Territory

Texas Power & Light Co. and the Southwestern Power Administration have signed a 20-year contract whereunder T. P. & L. will market a substantial portion of the output of SPA's Denison dam and SPA will draw on the company's facilities to serve its customers within Texas.

By integrating Denison with the Texas system, SPA for the first time in its four-year-old history, obtains the benefits of thermal generating capacity for its own use. Further, it obtains substantial transmission capacity without having to build it. Under the contract, Denison energy will enter the T. P. & L. system at a stipulated price, with SPA having the right to withdraw energy from the Texas system to meet the loads of its customers.

The contract, which stipulates rather carefully the extent to which either party may serve customers heretofore served by the other, also increases the firm capability of the Denison power plant from 20,000 kw. at 50 percent load factor to 25,000 kw. at any load factor. This could be duplicated ultimately in Oklahoma.

SPA Administrator Douglas G. Wright, commenting upon the contract, asserted that the transmission lines which could be justified for construction to market Denison energy in Texas would cover less than one-third of the area made available to the government under the contract just negotiated.

The contract specifically recognizes the preferences which the law accords public bodies and cooperatives in the purchase of federally generated power. It requires that the company turn over to SPA any or all of its Rural Electrification Administration cooperative loads or federal loads if such customers want service from REA.

On the other hand, SPA agrees that its right to take power from the T. P. & L. system is primarily for the service of public bodies and cooperatives, to make "diligent efforts" to sell its reserved share of Denison energy to such customers, and not to sell any energy to non-preferred customers as long as that energy can be sold to preferred buyers. For the first 18 months of the contract, it will not sell any energy from T. P. & L. system to any non-preferred customer. If at any time SPA sells to a non-preferred customer, Texas may cancel the contract on 36 months' notice. SPA's maximum demand on the Texas system is limited to 20,000 kw. until the third 35,000-kw. generator is in operation at Denison, and to 25,000 kw. thereafter.

The contract authorizes the installation of devices to prevent any non-Texas energy from entering T. P. & L.'s system through the Denison tie and to prevent the export of any T. P. & L. system energy over it. The provision is aimed at retaining Texas as an intrastate company and preventing it from becoming subject to Federal Power Commission jurisdiction.

Utility May Buy Extra Power

Texas may not be required to serve the government or any government customer in any town where T. P. & L. is or may later be serving customers at retail, a provision designed to prevent federal encouragement to municipalization within the utility's territory. Neither is T. P. & L. required to serve government loads going to customers of any private company directly interconnected with its own system. T. P. & L. gets the option to buy any Denison energy which SPA offers in Texas to any other purchaser, but if it does so, the amount SPA may withdraw from the Texas system is increased proportionately.

Rates, which must be approved by the Federal Power Commission, are as follows:

While only one generator is in service at Denison, $59,000 per month, less $1.55 per month per kw. of maximum demand, by the government, and less

Keeping Up the Load Curve

The Nebraska-Iowa Electrical Council reports that in January and February $40,000 worth of electrical appliances were installed in 76 homes completed in Omaha. Included were 59 ranges, 65 refrigerators, 39 clocks, 28 washers, 11 automatic washers, 2 ironers, 28 water heaters, 7 dish washers, 3 garbage disposal units, 5 ventilating fans, and a dryer.

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4 mills per kw.-hr. of government withdrawal after 250 kw.-hr. per kw. of maximum government demand.

Upon installation of the second 35,000-kw. Denison machine, scheduled for operation July 1, 1948, $52,000 monthly, subject to the same deductions as above.

Upon operation of the third 35,000-kw. machine, and for such periods as all three are available for commercial operation, an additional $6,000 monthly.

Wright estimated that the contract will, ultimately, make available about half of Denison's energy for distribution in Texas, the remainder for distribution in Oklahoma. Until the second unit is installed, T. P. & L. will take 120,000,000 kw.-hr. of primary energy yearly, out of a total of 140,000,000 kw.-hr. It will also take such secondary energy as the government finds available.

After the second unit goes into operation, Texas shall take 70,000,000 kw.-hr. annually of primary energy, and one-half of all the secondary. When the third machine is available for commercial generation, T. P. & L. may have the first half of its capacity except when required as reserve for the other Denison units. It may have the remainder of the third unit's capacity except when necessary for Denison reserve or for service to other government customers.

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Canadian January Output Record 3.9 Billion Kw.-Hr.

Indicating that the demand for electricity in Canada is keeping pace with the demand in the United States, Canadian central stations in January produced 3,919,475,000 kw.-hr. of energy to set a new record. The previous record of 3,615,777,000 kw.-hr. was set in May, 1946.

The consumption of primary power, the Dominion Bureau of Statistics reported, was 3,066,103,000 kw.-hr., the highest since May, 1944.

The following statistics are in thousands of kilowatt-hours:

Period	1947	1946
January	3,919,475	3,428,773
Primary	3,184,752	2,824,698
Secondary	734,723	604,075
Exports to U. S.	168,163	198,522
	1946	1945
December	3,672,116	3,288,710
Primary	2,997,925	2,610,232
Secondary	674,191	678,478
Exports to U. S.	166,716	217,737

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Cheap Power for College

Gainesville, Fla., which operates its own municipal power plant, has agreed to sell the University of Florida electricity at cost.

Bureaucrats' Way of Viewing Laws Blamed for Power Strife

General T. M. Robins, Formerly of Army Engineers, Supports Federal Multi-Purpose Projects but Blasts Interpretation of Public Power Legislation at Meeting of Northwest Group

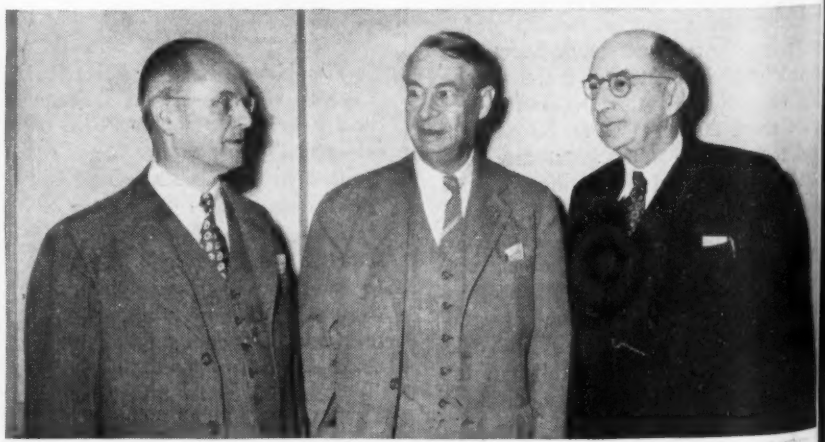
"MOST OF THE agitation and arguments that have arisen, and persist, over the disposal of power from federal multiple purpose projects could be done away with if the laws enacted by Congress were interpreted and administered with reason and tolerance," Gen. T. M. Robins, U. S. Army Engineers, retired, told those gathered for the Engineering Section meeting of the Northwest Electric Light & Power Association, held in Portland, Ore., April 9-11.

"If the people elect to be served by privately owned utilities, those companies have a right to purchase power at Federal projects without the imposition of discriminating rates and unreasonable contract provisions with a view to putting all privately owned utilities out of business. It is the intent of Congress that the people, not the bureaucrats, shall determine how they shall be served with electric energy," he said.

"Since the federal government has constituted itself as the major utility of the Pacific Northwest insofar as production of hydroelectric power is concerned, we must look to it for installation of sufficient generating capacity to meet all the needs of the region." Because of the tight power situation in the region, Robins said that Congress somehow must be persuaded to appropriate the money for the new projects and the backbone transmission lines now so urgently needed.

"The unfortunate attitude of Congress on appropriations," the general went on, "is being encouraged and exploited by those misguided people who claim that nothing should, or can, be done until a radical change is made in the part that the government plays in advancing the economic growth of the Pacific Northwest. They urge revision of all existing policies and plans for development in accordance with Socialistic ideas calculated ultimately to destroy private enterprise throughout the land. There is not legitimate need for establishment of any more Valley Authorities in this country. Existing laws and procedures fully protect the rights of the states in determining development of natural resources. We need development but not regimentation. Most serious consideration should be given by all the people of the region to the consequences before giving up the protection of their rights under existing law and subjecting themselves to an Authority unencumbered by any of the restraints that a Republic should erect against agencies of government," said Robins.

J. H. Polhemus, president of the association and of the Portland General Electric Co., said that the wholly unexpected load growth of the region had



WESTERN ENGINEERS—M. T. Crawford, left, chief engineer, Puget Sound Power & Light Co.; H. H. Schoolfield, chief engineer, Pacific Power & Light Co.; and R. S. Daniels, electrical engineer, California Oregon Power Co., at Northwest meeting

REPRESENTING FOUR UTILITIES—A. L. Pollard, left, general superintendent, Puget Sound Power & Light Co.; C. H. Kirk, superintendent of transmission and distribution, Montana Power Co.; L. C. Henkle, general superintendent, Portland General Electric Co.; and H. M. Jones, electrical superintendent, Idaho Power Co.

used up generating capacity to a point where there are grave prospects of a power shortage. Transmission and distribution facilities are overloaded, and the industry faces many serious problems; but he expressed confidence that engineers would come up with answers to meet the challenge.

Oil circuit breaker modernization come in for an exchange of experience along with many other operating problems. All companies are active in OCB modernization. Reports indicated costs ranging from 18 percent of the cost of a new breaker on up to 50 percent, and more in exceptional cases. Consensus was that it does not pay to spend more than 50 percent of new breaker cost in modernizing.

Considerable discussion was given to the critical power situation facing the Northwest until such times as additional units can be installed in the Grand Coulee power plant. Based on a critical water year, generating resources will be 60 mw short of load on next winter's peak. Should average water conditions prevail, there will be about 75 mw margin to spare. If necessary, the Northwest power pool will reduce load by lowering voltage, frequency, or both. All utilities reported large programs for installing capacitors to improve power factor. There is about 250,000 rkva. in the over four million kilowatt pool, and the plan is to swap rkva. for kilowatts at a faster rate than load can increase, thus greatly increasing generator peaking capacity. Capacitors, however, will not help out on the energy problem, except for a slight reduction in losses, and the problem of the Northwest is as much one of meeting energy requirements as it is of carrying peak. Steam generation is relatively small and only a fair water year can get them by.

In the aggregate, several companies will install more than 100,000 kva. in capacitors.

ASSOCIATION LEADERS — R. J. Davidson, left, Pacific Power & Light Co., chairman, engineering section, and J. H. Polhemus, president of Portland General Electric Co. and the Northwest Electric Light & Power Association

CONFAB—H. H. Cochrane, left, chief engineer, Montana Power Co., and Joseph Hellenthal, electrical engineer, Puget Sound Power & Light Co.

Conciliation Service Has Given Raises in 5 Disputes

Arbitrators appointed by the U. S. Conciliation Service at the joint request of employers and unions have, since the beginning of 1946, awarded wage increases in five disputes involving electric power utilities. The increases have been 10, 13 and 15 cents an hour and $28 a month, Conciliation Service records disclose.

The companies involved and the awards were:

Consolidated Edison System Companies of New York—All physical employees got a 15-cent increase and clerical workers, 10 cents. Other provisions added up to at least another five cents.

Duquesne Light Co.—The major part of the award gave an increase of 15 cents to hourly or outside workers and 13 cents to salaried employees.

Rockland Light & Power Co.—Hydro unit men got a 10-cent increase in September, retroactive to January 1.

Southern Indiana Gas & Electric Co.—The arbitrator granted a 13-cent increase to 300 employees, effective last October 1, but refused to eliminate a wage differential which reacts to the disadvantage of employees working outside Evansville and those in the gas department. The arbitrator held that the first differential was "good industry practice." He denied a higher increase to the lower-paid gas department employees because they "enjoy a better comparative position than they would if they were employed by a company devoted exclusively to the manufacture and distribution of gas."

Dairyland Power Co-op—The largest power-producing co-op in the country was made to pay a $28 monthly increase to 42 ground men and linemen, retroactive from last August to January 1, 1945. The increase did not quite make up the difference in wages paid by the Northern States Power Co. which serves the same area. The International Brotherhood of Electrical Workers, A.F.L., bargaining for the co-op employees, contended that Northern States Power paid wages $40 a month higher, in addition to giving the workers other benefits like paid sick leave and overtime pay.

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12,000-Kw. Plant Planned

Henderson, Ky., will build a new $2,000,000 steam generating plant with a capacity of 12,000 kw. An attempt will be made to use a 3,750-kw. and a 2,500-kw. unit now in the old plant. If it fails, two 6,000-kw. units will be bought instead of one.

Corrosion Control Importance to Electric Utilities Stressed

600 at Annual Meeting of National Association of Corrosion Engineers Told Lightning and Other Protective Devices Have Increased Corrosive Action—Corrective Procedure Suggested

"It is a sad commentary that engineers responsible for electrical and structural design do not give attention to design for the prevention of corrosion," said E. V. Sayles, Consumers Power Co., in opening an electrical industry symposium at the National Association of Corrosion Engineers annual conference in Chicago last week. With a registration of 600, representing electric utility, communications, water, gas, and oil companies, the four-day program of 34 papers and an exhibition by 40 companies appeared to the convention committee as evidence of an awakening interest in corrosion.

M. C. Miller, Ebasco Services, said that some of the very moves that have been made for lightning and other protection have increased corrosive action. He cited examples of the galvanic cells set up by station grounding systems, by multi-grounding, and line counterpoise installations, emphasizing that some additional care is needed to mitigate corrosion also. An engineer with responsibility for checking all designs for corrosion possibilities was suggested as the most practical approach.

Atmospheric Corrosion Studied

Atmospheric corrosion on overhead line hardware has been intensively studied in Pittsburgh as a basis for maintenance and replacement schedules, reported C. J. Couy, Duquesne Light Co. An attempt is being made to determine the economics of loss due to rust and also the permissible increase in cost for coatings more durable than now used, but generalizations are not yet possible, he concluded. Uniformity of zinc coating rather than heavy average coating is most important. He suggested that lead and aluminum coatings on line hardware should be developed for commercial production and that copper coating should be considered as everlasting in the severest exposures.

Agreement on terminology is an urgent need in corrosion control, said H. H. Anderson, Shell Oil Co. He issued a challenge to N.A.C.E. to collect and issue experience and cost data to prove that prevention is good economy, and to sell management on the need for this service. Less use of technical jargon and the harmonizing of apparent confusion were given as essential parts of this need.

Salt Injurious to Cables

Salt used for thawing ice on city streets was seen as a serious problem for owners of underground cables and piping, in the discussion following a paper by A. G. Andrews, Michigan Bell Telephone Co. He described a method of duct flushing by filling manholes with water and continuing the flow until the discharge in adjacent manholes tests negative. They are doing this yearly at locations where tests have shown alkali deposits. He mentioned salt from the pavement above as one of several causes of corrosive actions, which are in addition to the more familiar electrolysis action.

Cathodic protection to the 138-kv. cable of Los Angeles Department of Water & Power was found necessary after attempts to drain did not materially change the sheath potential to earth, said Irwin C. Dietze. It was found that the length of line does not determine how many units should be installed to maintain negative potential and it was necessary to equalize potentials of other cable systems where they cross to prevent interchange of current. Sheath grounding cells were installed between the cable and station grounds to prevent galvanic action at the ends.

A warning against general application of inhibitors without analysis of all conditions and the corrosion products was given by Norman Hackerman, University of Texas. He emphasized that they must be especially designed for the particular situation of metals and surroundings involved.

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Sullivan Gets President's Award for War Service

Dan A. Sullivan, Commonwealth Edison Co., Chicago, has been awarded the President's Certificate of Merit for his leadership of the Utilities Wartime Aid Program. The presentation was made by General H. L. Twaddle, representing the War Department, during the Midwest Power Conference which was held in Chicago.

In addressing the guests assembled at the dinner meeting, General Twaddle said, "During the war Mr. Sullivan served as utilities consultant and conducted surveys relating to emergency plans in event of utilities failures in various cities and Army installations. Later he rendered valuable assistance in reviewing and revising Technical Engineer Manuals pertaining to utilities for the Corps of Engineers."

It was noted that the utility industry furnished the assistance of about 600 engineers who devoted part of their time, and in many cases full time, to the problems of utility services for Army and Navy installations. Mr. Sullivan was constantly engaged during the war in directing this activity and in helping to clear the many questions which arose.

FOR WAR-TIME SERVICE—Dan A. Sullivan, Commonwealth Edison Co., receives the Certificate of Merit from Brig. Gen. Harry L. Twaddle

Testing Procedures, Practices Discussed at Meter Meeting

Utility Representative Tells P.E.A. Committee of Success in Removing Meters for Testing—Practices of Oiling Drive Motors and Demand Meter Mechanisms Reported as Varying

GOOD RESULTS from comprehensive adoption of universal demand registers and from a program of removing all meters for test were reported to the Pennsylvania Electric Association Meter Committee at a meeting in Pittsburgh on April 10 and 11. Other items of note were an expressed desire for a universal watthour meter and a portrayal of rate trends affecting metering technique.

Removal of meters for test is considered the best procedure according to Charles Iatonna of Pennsylvania Power Co. whose experience covers most of the period since 1929. Two-man crews handle the 62,000 meters on a due-date district-by-district basis, each crew removing and replacing 1,000 to 1,100 meters per month. At the shop the meters are tested "as found", fully overhauled, set to zero, tested "as left," and stocked. Advantages reported were the superior testing conditions in the meter shop, better accuracy, better testing efficiency, and preference by the staff. About half the meters are outdoors. At the time of removal the connections are checked, the installation tidied up, and weakened sockets replaced.

Iatonna said results are so satisfactory that it is contemplated to include polyphase meters in the program. Discussion brought out that only one other member company is removing for test; also that Ohio Power Co.'s mobile test trucks with 6-man crews are equally successful, completing upward of 15,000 meters per crew per year. The latter's laboratory truck is accompanied by a carryall for the test crew. Skips run 1 to 2 percent and are taken care of by the district meterman.

Discussions Show Deep Study

Practice as to oiling of demand meter mechanisms and drive motors appeared from discussion to vary widely; a good word was said for R. W. oil. E. L. Keller, Duquesne Light Co., attributed some torque troubles to progressive friction from felt washers on idle pointers; he replaces them periodically. He added that no accounting difficulties appear to have arisen from adoption of some 17,000 universal registers, many necessitating non-integral multipliers. That remark was followed later by a generally expressed desire for a single universal single-phase meter to cover all needs up to at least 50 amperes.

In a discussion of rate trends, R. E. Caywood, West Penn Power Co., doubted whether it would prove justifiable to dispense with the time-clock in conjunction with water heating loads. Omission would tend to remove validity of rate differences nor do present load curves permit elimination of off-peak limitations. He also foresaw increasing favor for combination light and power rates and progressive elimination of stipulation about customer usage except where peaks are accentuated or voltage adversely affected. Another trend indicated by Caywood was substitution of kilovar-demand for kva. metering.

E. L. Keller raised the issue whether time-clocks and separate meters for water heating could be financed, tested, and serviced every three years without endangering the profitableness of a promotional level of water-heating rate. Another point raised was the sharp load occasioned by possible simultaneous action of all time-clocks.

Philadelphia Electric Co.'s meter department has made up a group of illustrations showing the various standard metering installations for commercial and industrial customers. These, explained Nelson W. Yeakel, have been used to educate the power salesmen so that they will avoid making commitments which it would be difficult or too expensive to meter. Some involve compensating metering and most of them shop-assembled grids or cabinets.

Manufacturers had little new to report, all expressing the hope that production and deliveries could further be improved. Westinghouse Electric Corp. announced completion of the line watthour-thermal combinations, and Code Electric Products a line of outdoor boxes for watthour and demand meters.

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150,000-Kw. Plant Planned

Oklahoma Gas & Electric Co. has announced plans for the construction of a 150,000-kw. steam plant ten miles west of Oklahoma City on the North Canadian River at a cost of $9,000,000. The first of three 50,000-kw. turbo-generators is to be in operation by 1950, and the other two will be added as needed.

METER MEN LUNCH—Members and guests of the meter committee of the Pennsylvania Electric Association at a luncheon during their two-day session last week in Pittsburgh at which they studied problems and trends of the utility industry

New Jersey Law Fought as Phone Strike Continues

Union Declares State's Public Utility Anti-Strike Law Is Not Constitutional—Injunction Granted

As the strike of telephone workers continued this week, interest of utility men centered on New Jersey where officers of the Traffic Telephone Federation, an affiliate of the National Federation of Telephone Workers, submitted to arrest to test the constitutionality of the states public utility anti-strike law. In two other states, Virginia and Indiana where similar laws are in force, workers stayed on the job.

Indiana officials at first were uncertain as to whether the state law would be enforceable because of the interstate aspects of the telephone business, but Attorney General Cleon H. Faust in an informal opinion notified the governor that the law was valid in this case.

Apparently, union leaders agree as they have kept the workers on the job. Neither union nor management has given notice, as provided in the law, that there is a labor dispute.

The workers themselves accepted the situation but not with good grace. For a few days they answered all calls with a "spot announcement," "We are working against our will. This is our strike too. Whom are you calling, please?" They gave this up after a few days.

In New Jersey, the union which had first agreed to arbitration reversed its stand after the New Jersey Bell Telephone Co. had reversed its stand and agreed to arbitrate all issues in dispute and not just that of wages.

The union went into the Federal District Court at Newark where Judge Guy L. Fake granted a temporary injunction restraining the state from enforcing the criminal or civil provisions of its recent law providing penalties for unions and strikers for failure to work after public utilities have been taken over by the state. The state, however, can proceed with the compulsory arbitration provisions. A three-judge statutory court will be held in Newark on Wednesday to rule on the constitutionality of the law.

Two top officers of the union, President Mary H. Hanscom and Vice-President Virginia Wigglesworth, when arrested on charges of violating the law, waived examination in Common Pleas Court and asked that their cases be sent directly to the grand jury for indictment.

A widely announced one-day general strike throughout the state by all A.F.L. and C.I.O. union members to support the telephone employees disappeared in the midst of bickering among the state's top union leaders.

One Weakness in Indiana Law

Indiana's public utility anti-strike law which has kept the telephone workers on the job has been ineffective in the case of striking employees of the Indianapolis Gas & Coke Co.

The reason is that the gas company is municipally owned, and Attorney General Cleon H. Faust has given an unofficial opinion that the law cannot be invoked in case of strikes in municipally owned utilities as this would abridge the sovereignty of the cities. However, it is believed that the law can be amended by the next Legislature to make it apply to all utilities.

TO TEST CONSTITUTIONALITY OF LAW—President Mary Hanscom, center, and Vice-President Virginia Wigglesworth of the Traffic Telephone Federation of New Jersey enter court with Attorney Henry Mayer to answer charges of violating New Jersey's public utility anti-strike law

Western Senators Likely to Fight Copper Tax Cut

Western Senators at a meeting Tuesday appointed a strategy committee to decide action on the Patterson Copper Imports Bill in the very near future. Heading the committee is veteran Senator Pat McCarran, long an advocate of tariff barrier protection for Western and Midwestern metal mining industries.

Although the committee on strategy has not yet made its report to the 12 Westerners, it is obvious that the plan of attack will be a campaign for a one year waiver of the tariff on copper. This will probably lead to a fight on the floor of the Senate. The Patterson Bill as passed by the House and approved by the Senate Finance Committee contains a two-year waiver of the 4-cent excise tax on the metal.

Arkansas P. & L. Co. Buys Station at Lake Catherine

Sale of the government's Lake Catherine steam generating plant to the Arkansas Power & Light Co. for $925,000 has been approved by the War Assets Administration. The deal, which has been pending for several weeks, was a cash transaction, WAA reported.

A. P. & L. plans to complete the unequipped structure and install generating units of 80,000-kw. capacity in order to serve the nearby Jones Mill Aluminum plant, now under lease to Reynolds Metals Co.

Congress Shaping Labor Law; Will It Be Vetoed by Truman?

Both Houses Agree on Major Issues of Bill, Differ on Minor Points—Compromise Expected to Pass Easily—Republican Strength to Override Veto in Doubt—House Version Tough

NEW LABOR legislation began to take shape this week. On such major issues as strikes in public utilities, the closed shop, secondary boycotts, and jurisdictional strikes, both Senate and House were pretty much in agreement.

On other problems, the House was writing measures more restrictive than the Senate would accept. Hence, the final bill will come out of compromises in joint conference. It will pass Congress with little difficulty, then will raise two questions the answer to which may have repercussions in next year's presidential sweepstakes.

Will President Truman veto the bill? If so, can the Republican-controlled Congress swing enough Democratic support to override it?

All Labor Reforms in One Bill

Republican leadership has decided to send Truman one bill lumping together all the proposed labor reforms. In so doing, it increases the chances of a veto and the possibility of not being able to overcome it.

This raises still other questions. Will Republican leaders, in such a situation, let the matter die there, placing responsibility for any future industrial strife on the Democratic administration? Or will it put through those reforms which Truman has recommended, thus letting him, in effect, write the legislation?

House leaders admitted privately that the House bill was purposely very restrictive because of a conviction that compromises would have to be made with a milder Senate version. They did not want to compromise with pro-labor members in the House, then compromise again in the House-Senate joint conference.

For instance, the committee bill which House leaders approved this week amends the Norris-La Guardia Act so as to give private employers the right to seek injunctions against "unlawful concerted activities." These would include secondary boycotts, jurisdictional and sympathy strikes, strikes to enforce featherbedding or industry-wide bargaining, mass picketing or force or violence in picketing. Unions violating this provision could be prosecuted under the anti-trust laws, be sued by employers, and lose their Wagner Act rights for a year.

The new government board, called the labor-management relations board, would relinquish prosecuting functions to an administrator. It could deny rights to a union whose leadership was regarded as Communistic. Unions would be regulated internally as to dues and initiation fees, election of officers, etc., and would become liable to an unfair labor practice charge if they coerced workers into membership, refused to bargain with the employer or struck for union security. Employers could not contribute to union welfare funds.

Some Provisions

The House bill would exempt supervisors from coverage. Closed shop contracts would be barred, although employers could, if state laws permitted, agree on the union shop or other form of union security if a majority of the employees favored it. However, the employer need not bargain on union security.

Strikes would be illegal unless collective bargaining had taken place for 30 days and a majority of the employees voted in a government-sponsored poll to reject the final offer of management.

As to strikes affecting essential public services necessary to maintain health, welfare or safety, both the House and Senate would stop short of compulsory arbitration. They would permit government injunction for a period of 60 or 75 days while mediation or fact-finding took place. In the end, employees would vote on the question of striking.

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Correction

In ELECTRICAL WORLD, March 29, Page 42, reference was made to purchases by REA-financed cooperatives of power distribution systems in North Dakota towns of more than 1,500 population. This was an error. The story should have referred to the purchase last December by five cooperatives of the properties of the Interstate Power Co. in South Dakota.

CELEBRATION—David E. Lilienthal celebrates his confirmation as AEC chairman by taking his wife to DePauw University alumni dinner

Clapp Approval Expected; AEC Confirmed by Senate

A Senate vote on the nomination of Gordon R. Clapp as chairman of the Tennessee Valley Authority appeared imminent late this week. Confirmation seemed certain following the Senate's approval last week of the appointments of Chairman David E. Lilienthal and other members of the Atomic Energy Commission.

Though the lengthy debates over Clapp and Lilienthal were linked throughout, Senate leaders said that action on the Greek-Turkish loan, and perhaps other vital matters, would intervene between the two votes. Practically all criticism of the TVA appointee died after the AEC vote, however.

The final approval of Lilienthal was anti-climactic, the real battle having ended several days earlier when the Senate voted down, 38-52, a motion by Sen. John Bricker, Ohio Republican, to send the AEC nominations back to committee. Twenty Republicans combined with 30 Democrats to confirm Lilienthal, with 26 Republicans and 5 Democrats opposing. Nominations of the other commission members and general manager Carroll L. Wilson were approved by voice votes.

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Opposed but Confirmed

Despite strong opposition from REA cooperatives in the state, Wildon F. Whitney has been confirmed for another six-year term on the Wisconsin Public Service Commission.

Congressmen Plan to Restrict FPC's Authority over Utilities

Rep. Miller, Connecticut, Would Curb Power of Commission to Define Navigable Waters and Would Narrow Its Control over Interconnections—Natural Gas Authority under Fire

Two Congressional groups may combine forces to push legislation curbing the Federal Power Commission's jurisdiction over the electric power and natural gas industries.

Leaders of this move are two Republicans, Reps. William J. Miller of Connecticut and Ross Rizley of Oklahoma. Rep. Rizley and several other House members already had introduced bills to restrict FPC's controls over natural gas when Rep. Miller brought forth two proposals to amend the Federal Power Act.

Hearings on the Rizley Bill and other proposed amendments of the Natural Gas Act were opened this week by the House Interstate and Foreign Commerce Committee. Rep. Miller, a member of the committee, said that he hoped for hearings on his own bills within a few weeks.

The latter measures deal with the licensing of water development projects as well as FPC's regulatory authority. The principal amendment of the licensing provision of the Water Power Act of 1920 proposed in one of the bills (H.R. 2973) is its definition of "navigable waters."

Navigable Must Mean Navigable

In brief, the bill terms as navigable, and hence under FPC jurisdiction, only those streams "which are generally and commonly used for commerce of a substantial character" or which have "reasonable probability" of being so used. Proposed navigation improvement of any stream would be considered only if the estimated costs were "commensurate with the commercial benefits to be derived therefrom."

"This provision would set aside the decision in the New River case and other court opinions which have permitted FPC to find practically any body of water navigable," Rep. Miller pointed out. "It was the intent of Congress when the Water Power Act was passed only to conserve the water power resources of the country and to permit their development under such regulations as would give consumers good service and cheap power. But FPC has gone far beyond that intent."

Other provisions of the same bill exempt from licensing under the Act any project constructed under other authority prior to 1920; exempt "repair, reconstruction, operation or continued maintenance" of such projects and of any project completed under federal or state license on a non-navigable stream prior to passage of the Federal Power Act in 1935; require the licensing of projects not designed to generate commercial power only if they affected navigation.

The second Miller bill (H.R. 2972) amends Section 201 of the Federal Power Act to clarify the limits of federal and state regulation of electric utilities. It follows closely recommendations submitted to Congress by the National Association of Railroad & Utilities Commissioners. Its provisions would (1) forbid FPC regulation of the transmission or sale of energy over facilities located wholly within one state by persons engaged in local distribution of energy generated in another state; (2) limit FPC control over interchanges of energy to those which have interstate transmission of power as their principal purpose; (3) permit emergency interconnections, slop-over exchanges between connected systems, and connection of wholly intrastate systems with federal power facilities without subjecting the local companies involved to FPC regulation.

Rep. Miller said his interest in FPC's administration of the Federal Power Act was aroused last summer by a row between the commission and a group of Connecticut manufacturers. At that time FPC notified manufacturers who owned five small hydro plants on the Connecticut River that their power operations were subject to federal licensing. The manufacturers protested that their plants had a total capacity of only 731 kw., that all this energy was used for their own manufacturing operations, and that the act did not apply to such activities.

The manufacturers carried their protests to Rep. Miller, who said that FPC finally assured him the companies would not be pressed to apply for federal licenses.

"However, the commission never conceded that it had no authority to force such companies to obtain hydro licenses," Rep. Miller asserted. "They claimed that they were merely making a routine check of power operations on navigable streams. There are hundreds of manufacturers operating similar plants on New England rivers which would be subject to licensing under FPC's interpretation of the law."

MEETINGS

Previously Listed

Missouri Valley Electric Association—Rural Roundtable, Hotel Continental, Kansas City, Mo., April 22; Sales and Rural Conference, Hotel Continental, Kansas City, Mo., April 23-24.

National Rural Electric Cooperative Association—Annual Meeting, Davenport Hotel, Spokane, Wash., April 22-25.

Pennsylvania Electric Association—Systems Operation Committee, Hotel Statler, Buffalo, N. Y., April 24-25; Transmission & Distribution Committee, Irem Temple Country Club, Dallas, Pa., May 22-23. Communications Committee, Roosevelt Hotel, Pittsburgh, May 1-2.

Edison Electric Institute—Engineering and Accident Prevention Committee, Edgewater Beach Hotel, Chicago, April 28-30. Annual Meeting, Hotel Traymore, Atlantic City, June 2-5.

National Electrical Wholesalers Association—Annual Convention, Hotel Traymore, Atlantic City, May 4-8.

Northwest Electric Light & Power Association—Business Development Section, Olympic Hotel, Seattle, Wash., May 7-9.

Southeastern Electric Exchange—Power Sales Conference Thomas Jefferson Hotel, Birmingham, Ala., May 8-9; Home Service Conference, Thomas Jefferson Hotel, Birmingham, Ala., May 13-14.

American Public Power Association—Annual Convention, Hollenden Hotel, Cleveland, May 21-23.

Pacific Coast Electrical Association—Annual Meeting, Mission Inn, Riverside, Calif., June 4-6.

Duke Power Will Apply Scientific Forestry Plan

Duke Power Co. has announced a long-term plan of scientific forestry to be carried forward on 150,000 acres of land owned by the utility in the Piedmont Carolinas.

Tree farming will be carried on for the next 100 years. After that the plan aims to have one-hundredth of the forested land ready annually for prime saw timber. Theoretically, thereafter, replanting will provide a constant source of timber.

For the present, however, the Duke lands are expected to produce an annual cut for lumber and pulpwood, until the project has been developed into a completely controlled forest.

Cut-away of L-M Distribution Capacitor, showing the packs, heavy overlapped major insulation, discharge resistors, pack bracing, gasket construction and sealing.

Low Unit Stress*

designed and built into

L-M Distribution Capacitors

helps assure their long operating life

*Unit Stress: voltage stress per mil of thickness of insulation in the pack of a capacitor.

The theoretical life of a capacitor varies inversely as the fifth power of the unit stress. Therefore even relatively small changes in unit stress have a magnified effect on the life of a capacitor pack, because of this fifth power relation.

EXAMPLE—A pack with 10% lower unit stress than another will have a theoretically longer life by $(1.10)^5$ or 1.61. Thus, a pack operating at 10% lower unit stress will have a 61% longer theoretical life.

The only way to reduce the unit stress in a capacitor is to increase the pack volume. L-M Capacitors have a greater volume of pack per KVA because of additional insulation. Therefore L-M Capacitors have the lowest unit stress, and will give more years of service.

And, by its unique method of enclosing the pack assembly, Line Material makes available a capacitor that offers these advantages of lowest unit stress and long life, and yet meets all the dimensional requirements of the industry.

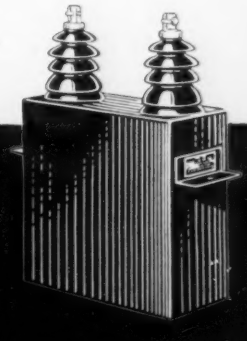
Individual Treatment PLUS Capillary Impregnation

Another important factor is the care in manufacture, and the *individual* treatment and *individual* testing of L-M Capacitors all along the line. Packs are wound in an air-conditioned, temperature and humidity-controlled room.

After the packs are placed in the steel cases, each capacitor assembly is *individually* and thoroughly dried under extremely high vacuum. Assemblies are then filled with "Elemex," (L-M's own dielectric liquid) by an exclusive capillary impregnation method. Careful sealing of units permanently precludes the entrance of air and moisture or the leakage of "Elemex."

Write for complete information about the many outstanding features of L-M Distribution Capacitors. Address Line Material Co., Milwaukee 1, Wisconsin.

SIZES... STANDARDS: L-M Capacitors are made in 15 Kva., 2400 to 13,800 volts; and 10 Kva., 2400 to 4160 volts. They meet EEI-NEMA standards.

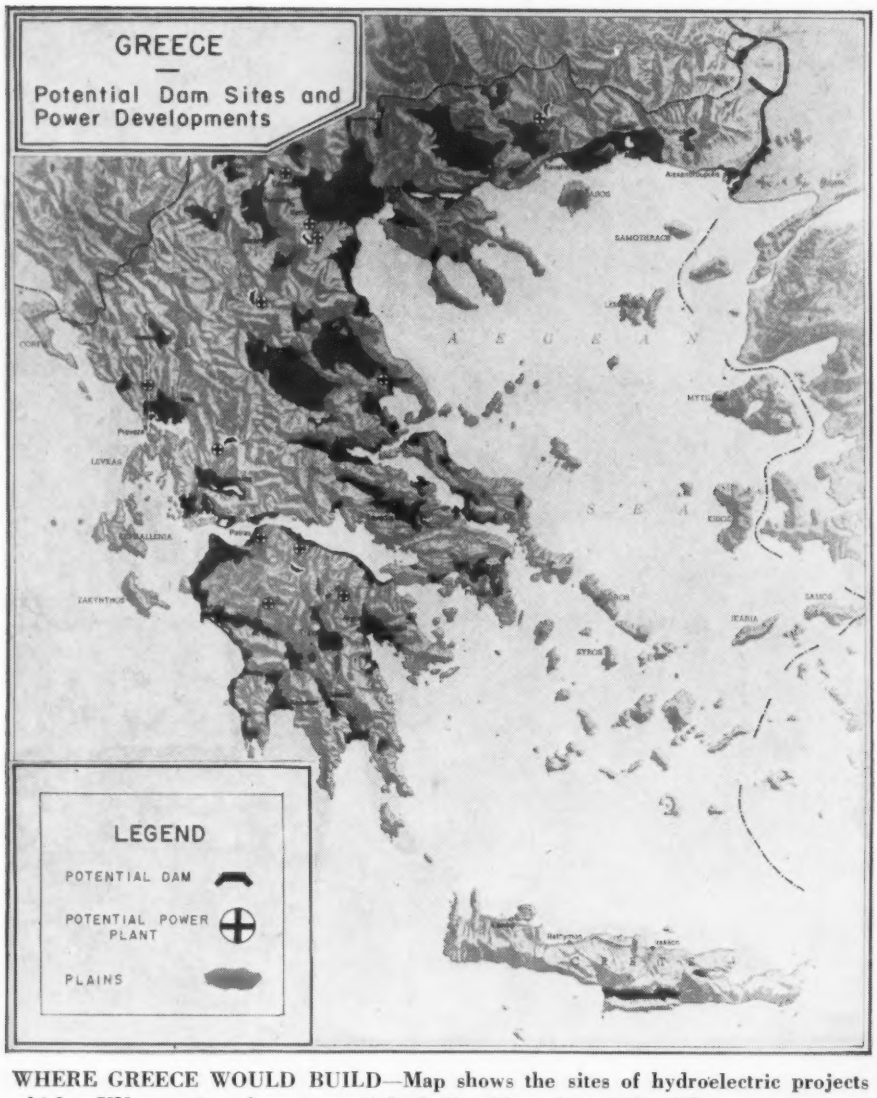


LINE MATERIAL

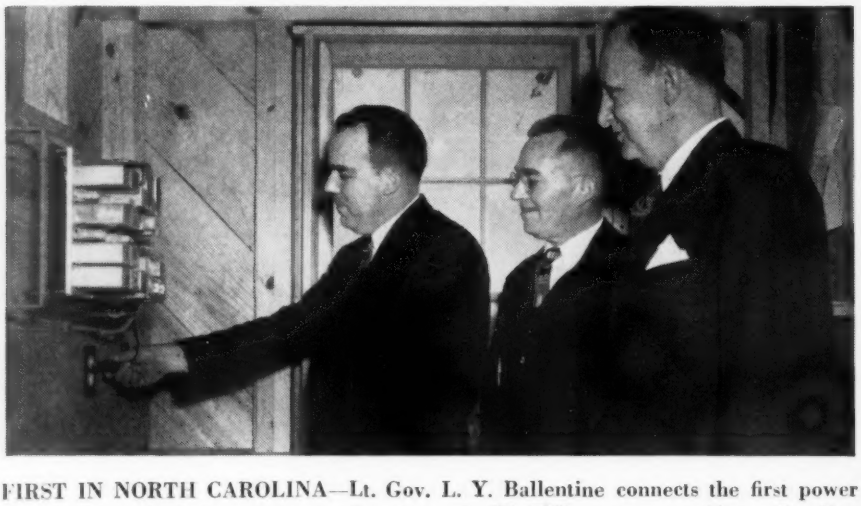
CAPACITORS

L-M DISTRIBUTION EQUIPMENT INCLUDES: Distribution Transformers • Fuse Cutouts and Fuse Links • Lightning Arresters • Oil Switches • Pole Line Hardware • Line Construction Specialties • Underground Equipment • Fibre Conduit • Street and Airport Lighting Equipment • Wired Radio Control Equipment • Capacitors

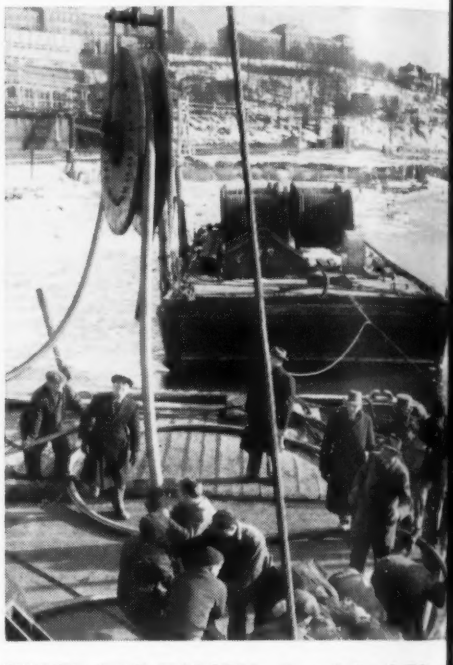
THE INDUST



WHERE GREECE WOULD BUILD—Map shows the sites of hydroelectric projects which a UN committee has suggested be built with an international loan

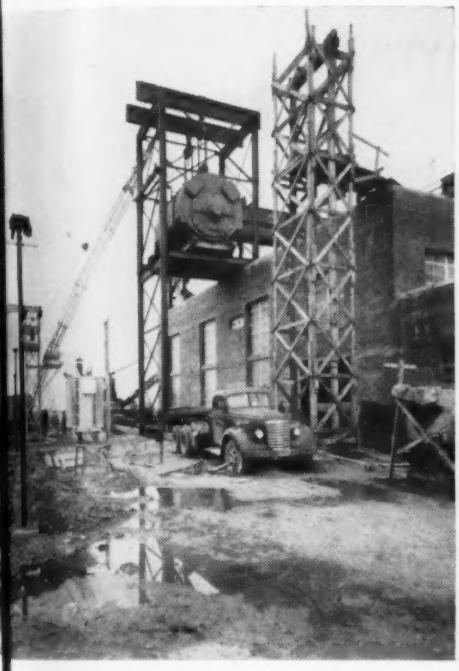


FIRST IN NORTH CAROLINA—Lt. Gov. L. Y. Ballentine connects the first power line carrier telephone service in the state. L. W. Hill, center, president, Carolina T. & T. Co., and L. V. Sutton, president, Carolina Power & Light, watch

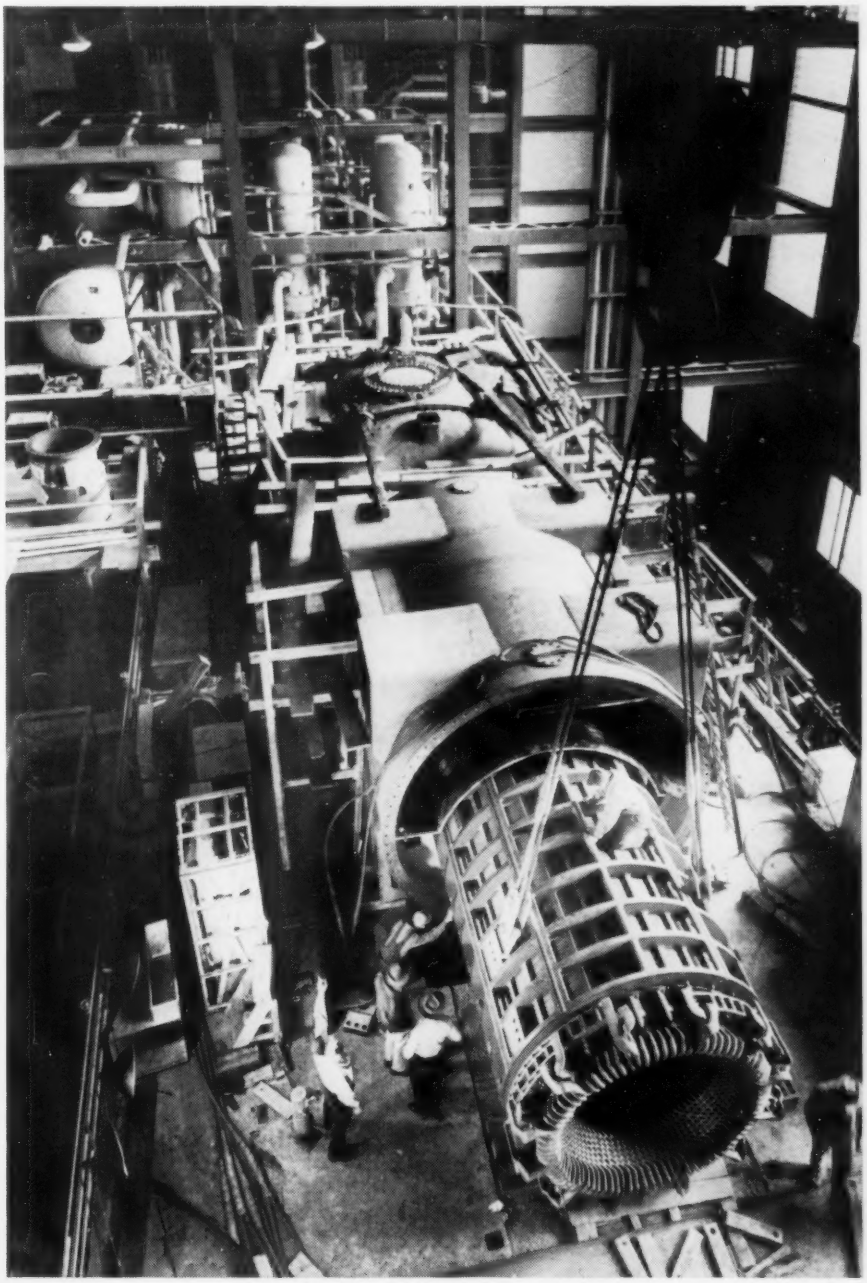


UNDER THE HARLEM—Consolidated Edison crew at work on a submarine cable, one of 138-kv., oil-filled, paper insulated, single cond cables, laid 512 ft. under the Harlem River to nect Manhattan and the Bronx

N PICTURES



TO THE TOP—The 121-ton, 30,000-kw. generator
h is to be installed in the Cecil Lynch plant
e Arkansas Power & Light Co. reaches the
high roof of the plant at the end of a trip
h required 2 hours and 15 minutes



"OVER," "SLOW," "EASY NOW"—With the greatest of care, workmen ease the low-pressure generator winding into the generator casing at the Southwark station of the Philadelphia Electric Co. in Philadelphia. Approximately one-sixteenth of an inch clearance will exist between the armature winding and the casing when it is installed. Feedwater heaters and evaporator are shown in the background. For engineering details of this 300,000-kw. station see Electrical World, June 22 and July 6, 1946

IDAHO PROJECT FROM THE AIR—Aerial view of Idaho Power Co.'s 16,000-kw. hydroelectric project at Upper Salmon Falls on Snake River near Hagerman, Idaho. With the installation of distributor equipment, the plant is nearing completion and should be ready for operation early this summer

Cubicle Switchgear

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Station Switching

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- ONE SHIPMENT
- ONE INSTALLATION

• It's easy to order and install Westinghouse Cubicle Switchgear because it's all in one package. Cubicle switchgear is ordered, built, delivered and installed as a unit. Simply add uniform units for expansion.

Each unit is divided by tight fitting barriers into eleven compartments, providing segregation of phases, sectionalizing of circuit, and isolation of control compartment. Each compartment is readily accessible for inspection and servicing. Ratings of all circuit breakers are confirmed by laboratory tests at full interrupting ratings to insure safe operation.

Operator and equipment are protected by the heavy gauge metal barriers and by an interlocking system. Interlocking prevents improper sequence in the operation of breakers, movement of disconnecting switches, and the opening of compartment doors.

Choose Westinghouse Cubicle Switchgear for feeder, generator, sectionalizing and similar segregated-phase and high level insulation circuits . . . wherever continuity of service is extremely important. Take a look at the facts. Write for Booklet B-3285. Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa. J-60632

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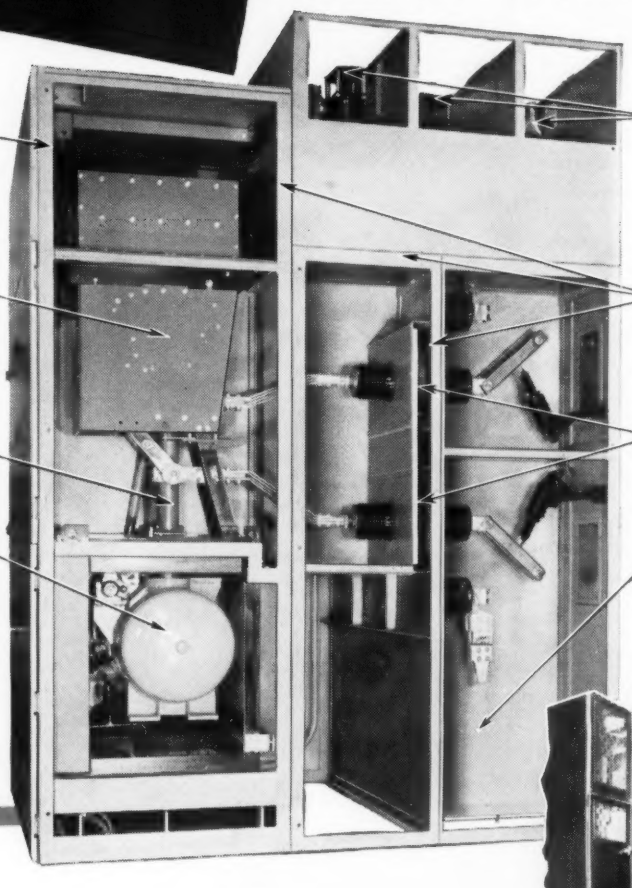
Complete accessibility of all parts through interlocked doors or removable panels for easy inspection and servicing.

Interruption secured without auxiliary devices. Air blast sweeps arc into arc chute, where it is quickly deionized.

*Straight-line air flow from tank gives fastest possible arc extinction.

*Full capacity operation obtained with air pressure not exceeding 150 psi. Air-storage reservoir holds enough compressed air for at least two complete breaker operations.



Main busses are accessible from top of switchgear. Cubicles have removable phase covers which provide ample-size entrances to bus compartment.

*Bonderizing of completely fabricated structure guards against corrosion . . . improves finish.

Bushing type current transformers are completely enclosed but accessible for inspection.

*Space for potheads for termination of cable within the breaker unit.

* Exclusive Westinghouse features.

Ratings: 1200 to 5000 amperes, up to 34.5 kv; interrupting ratings 500,000 to 2,500,000 kva.

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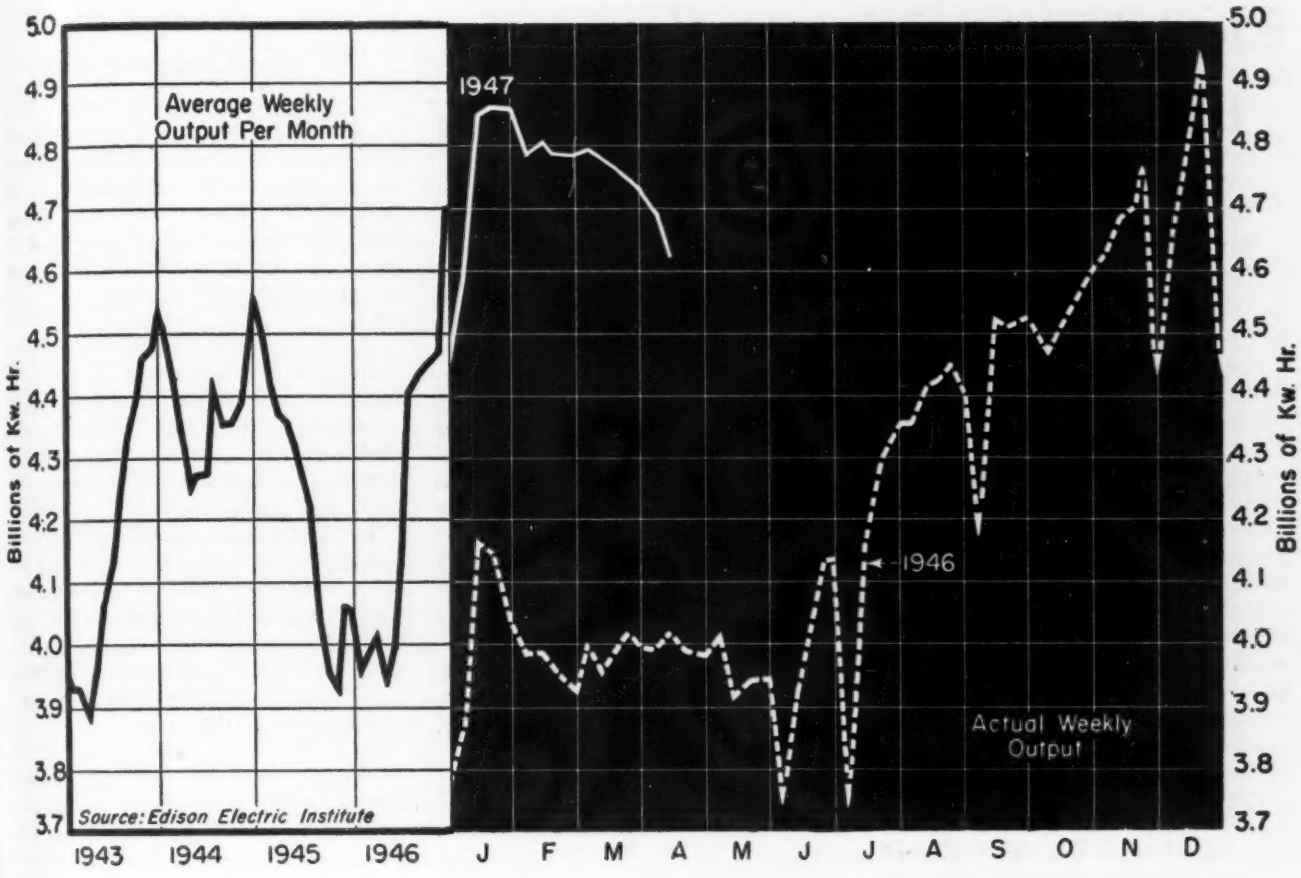
PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE

CUBICLE SWITCHGEAR



C.I.G.R.E. to Meet in Paris; Program Meeting in June

The International Conference on Large Electric High-Tension Systems (C. I. G. R. E.) will hold its biennial meeting in Paris, June 24 to July 3, 1948. Suggestions for the technical program will be drawn up at a meeting of the administrative council on June 11, in Montreal.

The council meeting will be held in conjunction with the summer convention of the American Institute of Electrical Engineers, and Colonel Ernest Mercier, president of C. I. G. R. E., will preside.

H. L. Melvin, chief consulting engineer, Ebasco Services, Inc., has been made chairman of the technical subcommittee of C. I. G. R. E., and he is selecting American representatives for the international study committees and preparing American recommendations for the technical program of the biennial meeting.

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Power for 9 of 10 Farms

The Potomac Edison Co., Hagerstown, Md., is looking forward to making electricity available to over 90 percent of the farms in its service territory by the end of this year. Last January 1, company records show that 76.2 percent of the 27,155 farms in its territory were connected for electric service, and 7 percent were within ¼ mile of distribution lines. This year the company plans to connect another 7 percent.

MISS DAMSITE—Screen Actress Janis Paige, who as Miss Damsite, presided this week at ceremonies held at Umatilla, Ore., when construction was started on the McNary dam on the Columbia River

Output Trend Normal

Indications that the output curve in 1947 will approach the normal ones of pre-war years appeared this week when the output of the light and power industry for the week ended April 12, 1947, was reported as 4,619,700,000 kw-hr. by Edison Electric Institute. This was the sixth week that output has declined. Output for the previous week was 4,693,055,000 kw.-hr. and for the corresponding week of 1946, that ended April 13, the total was 4,014,652,000 kw.-hr. The increase in output over the corresponding week of last year was 15.1 percent.

Weekly Output, Millions Kw.-Hr.

1947		1946		1945	
Apr. 12	4,620	Apr. 13	4,015	Apr. 14	4,332
Apr. 5	4,693	Apr. 6	3,988	Apr. 7	4,322
Mar. 29	4,729	Mar. 30	3,992	Mar. 31	4,329
Mar. 22	4,759	Mar. 23	4,017	Mar. 24	4,402
Mar. 15	4,764	Mar. 16	3,988	Mar. 17	4,398
Mar. 8	4,787	Mar. 9	3,953	Mar. 10	4,446
Mar. 1	4,797	Mar. 2	4,000	Mar. 3	4,472
Feb. 22	4,778	Feb. 23	3,923	Feb. 24	4,474
Feb. 15	4,778	Feb. 16	3,949	Feb. 17	4,472
Feb. 8	4,801	Feb. 9	3,983	Feb. 10	4,505
Feb. 1	4,777	Feb. 2	3,983	Feb. 3	4,539
Jan. 25	4,856	Jan. 26	4,034	Jan. 27	4,577

Percent Change from Previous Year

	Apr. 12	Apr. 5	Mar. 29
New England	+ 6.9	+ 8.9	+13.1
Mid-Atlantic	+ 6.4	+10.8	+13.6
Central Industrial	+16.9	+21.1	+24.4
West Central	+15.5	+18.2	+16.3
Southern States	+16.3	+18.0	+17.0
Rocky Mountain	+20.0	+12.2	+13.6
Pacific Coast	+23.1	+24.7	+19.6
Total United States.	+15.1	+17.7	+18.5

Electrical Cooking in Veterans Hospitals Checked by Formula

Engineers Adopt New Policy Which Gives Gas Big Advantage over Electricity for Cooking in 90 Hospitals to Be Built for Veterans Administration—Protests of Utilities not Met

Very little electric cooking equipment is likely to be installed in new veterans' hospitals under the latest policy decision of the Army Engineer.

Attempting to settle a gas vs. electricity squabble involving equipment for most of the 90 hospitals to be built by the Army for the Veterans Administration, the Engineers drafted an elaborate formula for the selection of cooking appliances. Its criteria are based upon overall annual costs of the competitive fuels and equipment, with fuel consumption estimates set at figures which make electric service considerably more expensive than gas.

The new policy was prepared as a result of protests by both the electric and gas industries that the Engineers' original selection standards were unrealistic. (ELECTRICAL WORLD, February 15, Page 95.) The new criteria meet few of the objections voiced by electric utilities and electrical equipment manufacturers, but aides to the Chief of Engineers asserted that "all interested parties" were given opportunity to be heard while the policy was under consideration.

Fuel Costs to Determine Equipment

District engineers, who will select equipment to be used in hospitals in their areas, have been directed to estimate annual fuel costs on the basis of costs of fuel, equipment and installation, and amortization and interest on investment.

Consumption of fuel will be calculated as follows: natural gas, 5.5 cu. ft. (or 5,500 BTU) per ration (three meals per person per day); manufactured gas, 10 cu. ft. (or 5,300 BTU.) per ration; electricity, 0.98 kw.-hr. per ration. The number of rations required per hospital would be fixed by the bed capacity, plus 25 percent of that number.

The principal protest of electric industry spokesmen against the old formula was that it fixed energy consumption at 1 kw.-hr. per person per day. They contended that consumption actually amounted to approximately .5 kw.-hr. per ration, or less, and that a higher figure would increase prohibitively the cost of electric service.

The Engineers' formula calls for amortization of distribution facilities, when provided by the government, over 25 years for electric systems and 30 years for gas systems. The amortization period for both gas and electric cooking equipment is 15 years. Interest on the investment was fixed at 2 percent per year.

Table of Values

Total demand and consumption estimates would be based upon the following table of values, which was included in the formula:

Hospital Bed Capacity	Power & Light Demand-Kw.	Monthly Cons. Power & Lt. Kw.-Hr.	Demand-Kw. Cooking Incremental
100	120	24,000	30
150	180	36,000	30
200	240	48,000	30
250	300	60,000	35
300	360	72,000	35
500	600	120,000	60
750	750	150,000	65
1,000	900	180,000	75
1,500	1,350	270,000	110

Equipment costs per bed are estimated in the formula as follows:

Bed Capacity Hospital	Gas Equipment	Electric Equipment
100	$15.69	$18.89
150	10.46	12.59
200	7.85	9.45
250	7.48	8.75
300	6.23	7.29
500	9.36	7.51
750	9.47	5.65
1,000	7.41	5.01
1,500	5.64	4.65

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Expansion Planned

The British Columbia Power Commission will add two 25,000-hp. units to the two that are now under construction at the Campbell River power development. The commission also plans to acquire the electrical distribution system of the Victoria Lumber Co., Ltd., at Chemainus, together with the privately owned distribution lines connecting with that system as well as the street lighting system in the same town.

E. E. I. Convention Theme to Stress Industry Future

"Looking Ahead in This Industry of Ours" will be the central theme of the 15th Annual Convention of Edison Electric Institute, to be held June 2-5, at Atlantic City, Charles E. Oakes, president of the Pennsylvania Power & Light Co. and chairman of the Convention Attendance Committee, announced this week.

The program, he explained, has been planned with a view to its special usefulness to younger men and at the same time keeping to these convention objectives:

To give industry people inspiration, hope, and confidence.

To inspire public confidence in our industry.

To learn new ideas on gaining employee and public knowledge of our business.

To inform our people of what's new.

To explore pitfalls, problems, and potentialities of the future.

To promote free enterprise.

Attendance is expected to approach 3,000, and it is expected that many younger executives and others marked for positions of responsibility and leadership in the industry will be present.

Phil H. Powers, vice-president of West Penn Power Co., and chairman of the Convention Program Committee, has already secured over 30 speakers for the four-day program.

All phases of the industry of interest to management will be covered. Even the foreign aspect will not be neglected as the closing address will be made by Gen. Wade H. Hayes, president, Edmundsons Electricity Corp., Ltd., London, who will explain what the electric supply industry is up against in England and how Americans can profit from the English experiences.

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Co-op Tax Bill Dropped

A bill which proposed to tax rural electrification cooperatives and one to tax municipally owned utilities on a basis similar to privately owned utilities have been dropped in the Iowa House of Representatives.

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New Plant in Utah

Utah Power & Light Co. has announced plans for construction of a $5,800,000 steam-electric generating plant at Orem, Utah, 30 miles south of Salt Lake City. The plant will have a capacity of 40,000 kw.

MANUFACTURERS & MARKETS

Lighting Exposition Programs Announced; Displays to Fill Exhibition Hall

The program of forums and conferences to be held at the 2nd International Lighting Exposition at the Stevens Hotel, Chicago, November 3 to 7, as well as additional data on industry support, was made known last week. Four morning round table discussions and forums on subjects related to the application, utiliation, and sale of lighting equipment are planned. More than 80 manufacturers will exhibit the "newest in lighting."

Through the morning conferences the committee plans to make better known the practical applications of the newest developments in illumination and the significance of the Exposition's theme "Plan Tomorrow's Lighting Today." Conference topics are: Tuesday, Trends and Progress in Lighting; Wednesday, Industry Plans for Lighting Promotion; Thursday, How the Electrical Wholesaler Can Increase His Lighting Sales; and Friday, The Electrical Contractor, the Key Man in the Lighting Plan.

Plans niclude discussions on new ideas in the technique of "Planned Lighting" and its more effective presentation to the customer. This is set up to appeal to the utility lighting engineers, the electrical contractor and electrical wholesaler. Sessions planned for users of lighting are based on how to obtain "Plan Lighting" to increase sales in stores, to increase production and safety industrial plants, and to improve educational results in schools.

Exhibition to Be Big

The entire Stevens Exhibition hall will be utilied to display lamps, fixtures and allied equipment and products. Among the manufacturers planning displays are: Acme Electric Corp., All-Bright Electric Products Co., Art Glass Co., Inc., Art Specialty Co., Benjamin Electric Mfg. Co., Bent Glass Works, Inc., Bright Light Reflector Co., Bryant Electric Co., Camfield Manufacturing Co., Chicago Transformer Div. of Essex Wire Corp., Compco Corp., Corning Glass Works, Crouse-Hinds Co., Curtis Lighting, Inc., Day-Brite Lighting, Inc., E. I. DuPont de Nemours and Co., Electrical Wholesaling, Electrical World and Electrical Construction and Maintenance, Electro Manufacturing Corp., Electrical Testing Laboratories, Inc., Faries Manufacturing Co., Fleur-O-Lier Manufacturers, The Fostoria Pressed Steel Corp., General Electric Co., General Luminescent Corp., Globe Lighting Products, Inc., Good Manufacturing Co., Inc., Holdenline Co.

The Holophane Co., Inc., Illuminating Engineering Society, Interchemical Corp., International Molded Plastics, Inc., Jefferson Electric Co., The Jones Metal Products Co., Kahn Manufacturing Co., Inc., Keystone Electric Manufacturing Co., The Kirlin Co., Krieger Publications, Kulka Eltctric Mfg. Co., Inc., Lawter Chemicals, Inc., Lighting Products, Inc., Line Material Co., Luminal Paints, Div. of Nat'l. Chem. & Mfg. Co., Metropolitan Fluorescent Co., The Miller Co., Mitchell Mfg. Co. Mobilite, Inc., Overbagh & Ayres Mfg. Co., Paragon Electric Co., Pass & Seymour, Inc., The Perfeclite Co., Phoenix Glass Co.,

Pittsburgh Reflector Co., Planet Products, Inc., Quadrangle Manufacturing Co., Richter Metalcraft Corp., Ruby Lighting Co., L. J. Segil Co., Inc., A. L. Smith Iron Co., Sola Electric Co.,

AND BIG—The $25,000,000 Electronic Park, home of the General Electric electronics department, is expected to be completed by the end of the year. This large Syracuse research and manufacturing project will cover 155 acres, 30 of which will be under roof. Approximately 5,000 employees will be utilized at full operations

Solar Light Manufacturing Co., The Spero Electric Co., Swivelier Co., Sylvania Electric Products Inc., Thompson Electric Co., Verd-A-Ray Corp., Kurt Versen Co., F. W. Wakefield Brass Co., Watco Engineering, Inc., Westinghouse Electric Corp., Lamp Division and Lighting Division, The Wheeler Insulated Wire Co., Inc., Wheeler Reflector Co., and The Wiremold Co.

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All Union Officials Discharged at Allis

Discharge of the only three remaining leaders of Local 248, C.I.O., UAW, last week, at the Allis-Chalmers Mfg. Co. terminated employment of all union officials in the Milwaukee plant.

Fired, together with 77 other employees for misconduct during the strike were Fred McStrout, recording secretary; Alfred Ladwig, financial secretary; and Linus Linberg, treasurer. W. C. VanCleaf, director of industry relations for the company, who made the announcement stated terminations have already been sent to the eighty workers.

"The terminations are due to acts of violence, personal interference with the right to work, and other similar misconduct," he stated.

Robert Buse and Joseph Dombek, local president and vice-president, had previously been discharged. The 328-day strike ended when union officials asked the members to return without a contract.

The bargaining agency contest meanwhile is continuing. The independent union of Allis-Chalmers employees petitioned the Wisconsin Employment relations Board to certify one union based on the January 26 election results. This petition the state board denied pending a NLRB ruling on employee status of the labor leaders.

Sylvania Sales Increase 300 Percent Over 1941

A sales increase of 300 percent over 1941, a net income of $2,384,017, and a strengthening of the company's position in its fields were the high lights brought out in Sylvania Electric Products, Inc. 1946 annual report. Recently released, the report states 1946 sales totaled $69,313,128 and compared with $20,000,000 in 1941.

In summarizing the report Walter E. Poor, chairman of the board, states that lighting products, including photoflash bulbs accounted for approximately 40 percent of the 1946 sales, and about 60 percent comes from radio and electronic products.

"In appraising 1946 results and the position of the company at the beginning of 1947", states Mr. Poor, "the management finds much that is encouraging. Results for the year show that Sylvania has attained a more important position in both the radio and lighting fields than it occupied before the war. It is satisfying to report that in a year of so much labor-management controversy throughout the country, the good relations between the management and workers of Sylvania were maintained." The report stated that the company was able to meet the requirements of most customers in 1946 despite a greater than anticipated demand for its products, and in spite of material and labor shortages and generally unsettled national conditions, and commented that these factors along with wage increases, price control and the fact that workers generally were not producing as they did pre-war affected profits substantially. However, said the report, results for the last quarter of the year were much improved compared with the preceding three quarters, reflecting some improvement in production efficiency and the fact that price adjustments had been made where necessary. Out of reserves set aside from earnings during the war, $1,315,507 was used during the first nine months of 1946 to cover costs of conversion to peace-time production which was substantially completed by October.

The report states that sales effort in 1947 will be reinforced by the largest advertising program in the company's history. The report also discloses that the management has budgeted approximately $6,500,000 for its engineering and research activities in 1947 in the belief that engineering "will be of great importance" to the company's growth.

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Adalet Mfg. Has New Owner

J. C. Boyton, founder and president of the Adalet Mfg. Co., Cleveland, Ohio, has announced the sale of his interests and severance of his connections with the company. His son, J. R. Boyton, secretary, has also severed his connection with the organization. Henry D. Stecher is president of the new organization.

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Electric Lamp Shipments Total 339,000,000 Units

Shipments of electric lamps in the third quarter of 1946 amounted to 339 million lamps as compared to the 347 million lamps shipped during the second quarter of 1946, according to a report released by the Bureau of the Census. Value of shipments during the third quarter amounted to $37.1 million. Almost 365 million lamps were produced during the quarter, 21,000,000 more than in the second quarter. Stocks at the end of the quarter amounted to 227 million lamps, an increase of 26,000,000 over June 30.

Shipments of electric lamps represent lamps shipped from the factory and do not represent the sales of lamps to ultimate consumers.

Electric Lamps . . . Production, Shipments, and Stocks, Third Quarter 1946

(Quantities in thousands and value in dollars)

	Number of Companies	Stocks on Hand June 30, 1946 Quantity	Production Quantity	Shipments				Stocks on Hand Sept. 30, 1946 Quantity
				Domestic		Export		
				Quantity	Value (dollars)	Quantity	Value (dollars)	
TOTAL	25	200,770	364,847	322,261	35,286,877	16,271	1,880,738	227,085
Large	16	131,684	221,445	194,173	27,206,475	10,652	1,541,386	148,304
Incandescent, 150 watt and under	16	103,903	177,143	153,051	12,744,889	9,381	999,194	118,614
Incandescent, 150 watt and over	15	13,690	17,965	16,353	6,547,778	433	225,182	14,869
Fluorescent, RF and F*	6	7,790	14,296	13,606	6,827,316	603	297,056	7,877
Germicidal	4	393	100	88	209,662	.....	595	405
Photoflash	3	5,908	11,941	11,075	876,830	235	19,359	6,539
Miniature	14	45,707	90,688	82,675	5,469,863	5,340	311,817	48,380

** Does not include fluorescent Christmas tree or RP-1 "black light" but does include tubular, straight, and curved types*

NEWS ABOUT PEOPLE

S. Lindell Appointed Chief Engineer of S & C Electric

Sigurd I. Lindell, who has been associated with S & C Electric Co. (formerly Schweitzer & Conrad, Inc.), Chi-

S. I. LINDELL

cago, for the past 22 years, has been advanced from consulting engineer to chief engineer.

Lindell was born in Sweden where he received a degree in electrical engineering and later was occupied for a time on electrical construction projects. In 1923, he came to the United States and engaged in the design of electric motors and related apparatus. Joining the S & C engineering department in 1925, he has served there in various capacities but has been chiefly occupied with the technical phases of design, development, and application of high voltage protective and interrupting equipment.

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▶WILLIAM I. KEIRSTEAD has been appointed assistant chief engineer of the Mason steam generating station of the Central Maine Power Co., at Wiscasset.

▶JOHN W. DEVEREAUX has been elected vice-president of Deena Products Co., Chicago. Mr. Devereaux will take charge of the company's public utility business and develop samples of certified lamps that will tie in with the program of Certified Lamp Makers. For many years prior to the war, Mr. Devereaux was a member of the Public Utility Engineering & Management Corp. He was responsible for the development and operation of an appliance merchandising organization on subsidiary properties of the Standard Gas & Electric Co., later becoming lighting sales director of the company. Mr. Devereaux served two terms as chairman of the Chicago Section of I. E. S. For the past five years, he has been located in Washington with WPB and OPA.

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New S.E.E. President Has Worked Throughout Area

(See Front Cover)

McGregor Smith, who has been elected president of the Southeastern Electric Exchange, has had wide experience in utility regulation and operation in the Southeast since his graduation from the University of Tennessee in 1921.

After serving a year as an assistant engineer for the Tennessee Railroad and Public Utilities Commission, he was made engineer and remained with the commission until 1926 when he became manager of the South New Orleans Light & Traction Co., with properties located along the west bank of the Mississippi River across from New Orleans proper.

It was during 1926-27, that he completed his study of law at Vanderbilt University.

On January 1, 1928, Smith became general manager of the Louisiana Power & Light Co. His rapid promotion to director and vice-president was followed with the presidency in 1936.

In 1939, he became vice-president of Florida Power & Light Co., Miami Water Co., and Miami Beach Railway Co. and was made president of these companies the same year.

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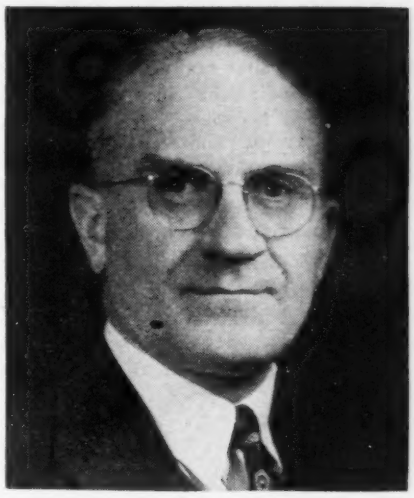
▶S. G. DETHRIDGE, superintendent of the Regina, Sask., Canada, Light & Power Department, has retired. His successor is HENRY I. NICHOLL, who has been assistant superintendent.

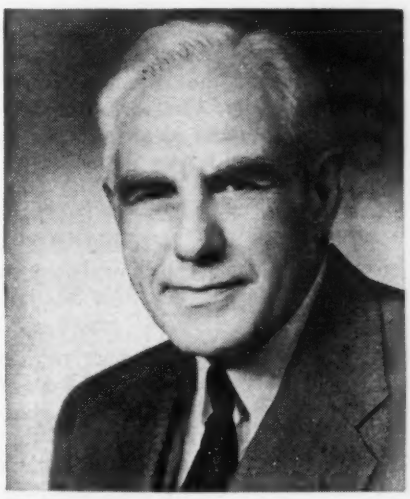
General Electric Moves E. Potter and E. O. Shreve

General Electric Co. has announced the election of Edwin E. Potter to the post of vice-president in charge of the commercial aspects of the company's



E. E. POTTER

relations with customers, succeeding Vice-President Earl O. Shreve, who continues as a member of the president's



E. O. SHREVE

staff with special duties as assigned.

In his new capacity, Potter will direct the activities of the company's commercial vice-presidents in the field. His headquarters will be in New York.

Potter joined General Electric in

1910 with the Edison Lamp Works at Harrison, N. J. Since then he has held many positions with the company including manager of the New York district, assistant manager of the Edison Lamp Works, general manager of the Edison Lamp Works at Nela Park, and general sales manager of the Lamp Department's Eastern Division.

In March, 1945, he became a commercial vice-president and has been a member of the staff of President Charles E. Wilson. He has been responsible for co-ordinating the customer relations of all departments and affiliated companies of General Electric in the District of Columbia, with headquarters in Washington.

Shreve, a veteran employee, has held many positions since he joined G.E. in 1904. His first major position came with his appointment in 1926 as manager of the industrial department in Schenectady. In 1929, he became assistant vice-president in charge of sales, and in 1934, he was elected vice-president in charge of apparatus sales. In 1941, he was named chairman of the G.E. apparatus operating committee, which directs the over-all activities of the apparatus department. His last promotion to the president's staff came in 1945.

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▶ PHIL L. COPPS has been made manager of the Port Townsend office of the Puget Sound Power & Light Co. to succeed TED MARRIOTT who has retired after 33 years service.

▶ DR. HARRY B. OSBORN, JR., sales manager, Ohio Crankshaft Co., Cleveland, was made the recipient by the Cleveland Junior Chamber of Commerce of its annual award of "Cleveland's Outstanding Young Man of the Year." Dr. Osborn joined the Ohio Crankshaft Co. in 1939 and has been sales manager since last July. He is the author of many technical papers and publications on induction heating.

▶ WALTER F. OBERST, formerly vice-president of the Meadows divisions of Electric Household Utilities Corp., Chicago, has been named president of that division, which is located in Bloomington, Ill. OWEN G. NUGENT has been advanced from eastern division manager to vice-president in charge of manufacturing. A. R. NICKSON has been appointed vice-president in charge of plant engineering for all company plants, which are located, besides Bloomington and in Chicago, in El Monte, Calif., and Toronto and London.

VEPCO Elects Goodman Division Vice-President

R. H. Goodman, manager of the Williamston (N.C.) district of the Virginia Electric & Power Co. since 1932, has been elected vice-president in charge of the southern division to succeed J. T. Chase, who retired March 1.

Goodman started with the utility in 1926 as a timekeeper and held various positions until the company established a sales department, when he was made sales manager of the Carolina Division. In 1932, he was transferred to Williamston, N. C., to take over the position he held until his promotion.

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▶ L. M. MORLEY, vice-president in charge of sales for the Brown Instrument Co., a subsidiary of Minneapolis-Honeywell Regulator Co., has been elected a vice-president of the parent concern, but will continue to supervise sales of the industrial control devices made by the Brown division.

▶ PROF. KARL P. HANSON, member of the faculty of the University of Connecticut, has been appointed head of the department of mechanical engineering at North Carolina State College, effective July 1. Prof. Hanson will succeed PROF. L. L. VAUGHAN who will continue to teach classes in heating, ventilating and air conditioning and, in addition, will devote the major part of his time as director of instruction in the school of engineering, working in close association with Dean J. H. Lampe, head of the college's school of engineering.

▶ DR. JOHN B. WILBUR has been appointed head of the department of civil and sanitary engineering at the Massachusetts Institute of Technology, succeeding the late Theodore B. Parker. Dr. Wilbur was chief engineer for the Smith-Putnam wind turbine project in Vermont for the S. Morgan Smith Co. from 1940 to 1945, and is well known in the electrical industry. He was at one time associated with Fay, Spofford & Thorndike, consulting engineers, Boston; has been active in structural design since his graduation from M. I. T. in 1926; and is co-author with Prof. W. M. Fife (M.I.T.) of "Theory of Statically Indeterminate Structures" (McGraw-Hill Book Co.), and has written many other technical papers and bulletins. He is a fellow of the American Academy of Arts and Sciences, and during World War II was a consultant to the National Defense Research Committee, and was in charge of an investigation for the Office of Scientific Research and Development.

OBITUARY

Oliver D. Dales

Oliver D. Dales, 72, chief civil engineer of Buffalo, Niagara & Eastern Power Corp. and chief engineer of Niagara Junction Railway until his retirement in 1945, died suddenly on March 27, in Clearwater, Fla., where he was spending the winter.

A graduate of Michigan State College, Dales did engineering work in Iowa and Minnesota before joining the old Niagara Falls Hydraulic Power & Manufacturing Co. in 1904 as a draftsman on design of Station 3A of the Schoellkopf hydroelectric station. From then until 1929, he was actively engaged in the construction of hydro stations on the American side of the Niagara River.

From 1929 to 1934, he was engineer in charge of construction with the old Buffalo, Niagara & Eastern Power Corp. and was named chief civil engineer of that company in 1934.

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Harry C. Beaver

Harry C. Beaver, 70, vice-chairman of the board and former president of the Worthington Pump & Machinery Corp., died April 2, in New York.

During his term as president from 1931 to 1944, the Worthington firm expanded greatly through the acquisition of numerous smaller firms.

After attending Juniata College and Marquette University Law School, he began his long business career with the Pennsylvania R.R. He left to join the sales department of Westinghouse Electric Corp. and in 1904, went to Allis-Chalmers Manufacturing Co. as assistant to the president. Later he became general manager of the company's electrical plant at Norwood, Ohio.

In 1912, Beaver joined the Stevens-Duryea Co. at Springfield, Mass., as vice-president in charge of sales and advertising. Seven years later he went with Rolls-Royce of America, Inc., as treasurer but was later made vice-president in charge of engineering and manufacturing.

He joined the Worthington corporation in 1931 as vice-president in charge of sales.

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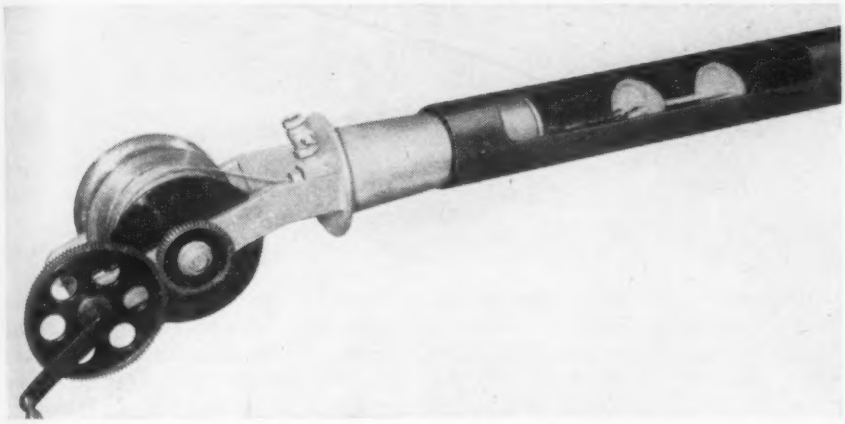
▶ E. L. BERRY, 52, vice-president in charge of production for the Link-Belt Co., died of a heart attack on April 3.

NEW EQUIPMENT

Pneumatic Fish Line Cuts Rodding Time and Cost



A NEW "pneumatic" fish line, which is reported to cut rodding cost, rod any length or size of conduit, clean out water, sand, and other loose obstructions, and not to be affected by minor fixed obstructions, has been developed by T. J. Cope, Inc., 6120 Vine St., Philadelphia 39, Pa. The unit is made up of a couple of rubber cups which are attached to the fish line, a reel to hold the wire, a re-reeling device, and a wooden plug to seal off the mouth of the plug.

To use, the rubber cups and sealing plug are inserted in the conduit as illustrated. A compressed air or bottled air line is attached to the air valve on the plug. As the valve is opened, the air pushes the rubber cups through the conduit and drags the line with it.

A re-reeling device is attached to the plug. The hand wheel acts as a brake while "shooting" or rodding the conduit. The manufacturer reports that runs up to 1,000 ft. have been rodded in less than 10 min.

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Instrument Measures Air Velocity to 5 ft. Per Min.

A NEW meter which is reported to measure air velocities as low as five feet per minute has been announced by the Hastings Instrument Co., Inc., Hampton, Va. The meter is applicable to the measurement of air movement in ducts, surveys of heating and air conditioning systems, measurements of wind velocities, etc. Principle of operation is based on a combination of hot-wire and thermopile principles. This arrangement is reported to increase the accuracy of the instrument by minimizing errors due to air temperature variations.

The pickup element is noble-metal thermopile which is placed in the air stream. Alternate junctions are arranged to have greater cooling than adjacent junctions which are heated by passing alternating current through the wire. The temperature rise of the warmer junctions is measured by the d.c. thermo-electric voltage generated. The unit operates on 110 a.c. circuit.

Standard range of the instrument is from 0 to 2,000 feet per minute. Fifty feet per minute is approximately 20 percent of full scale. The instrument may be adapted for remote indication. It is also suitable for operating standard strip or circular chart electrical recording instruments.

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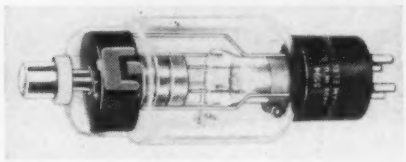
New Rectifier Envelope Xenon Gas Filled

A NEW Xenon-filled Thyratron, Type 5594, has been developed by Chatham Electronics, 475 Washington St., Newark 2, N. J. The Xenon gas is said to



eliminate the need for auxiliary equipment to maintain bulb temperatures and to remove many other rectifier limitations. The rectifier is said to operate through an ambient temperature range of from minus 55 deg. C. to plus 90 deg. C.

Among the maximum ratings given are: peak forward anode voltage, 2,500 volts; peak inverse anode voltage, 5,000 volts; average anode current, 0.5 amp.; peak anode current, 2 amp.; filament voltage, 2.5 volts; and filament current, 5 amp.

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FM Pushbutton Tuning Developed by Motorola

APPLICATION of pushbutton tuning to frequency modulation radio sets has been developed by the Galvin Mfg. Corp., 4545 Augusta Blvd., Chicago, Ill. It has been applied to both home and car radios and is said to overcome "drift" difficulties.

The manufacturer reports that by redesigning the major components in the circuit and by introducing a radar-like motor-driven tuner, compensation for the effect of drift without compromising the selectivity is obtained. The tuning device incorporates a permeability-tuned transmission line in which

the forward and backward motion of the iron slug varies the electrical length of the transmission line. It is stated that by this means razor-sharp reception is obtained.

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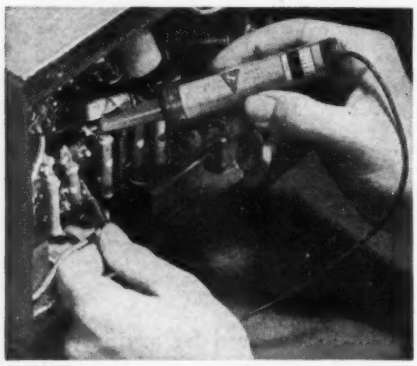
Pocket-Sized Ohmmeter Facilitates Circuit Checks

A POCKET-SIZED ohmmeter for spot checking radio and electronic circuit components, relays, generators, starters, electric clocks and other electrical equipment has been announced by the radio tube division, Sylvania Electric Products Inc., 500 Fifth Avenue, New York 18, N. Y.

The instrument has been designed particularly for use by servicemen as a



pocket indicator for preliminary isolation of electrical faults, etc. In radio set servicing the miniature ohmmeter will indicate transient or other faults in difficult replacements including i-f transformers, tuning units and audio sections; approximate values of individual resistors; and open or shorted conditions in other circuit components.

It also provides a direct-reading means for spot check in automotive electrical equipment, industrial electronic apparatus, home appliances and experimental or development electrical circuits.

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Conversion Resistors Adapt Fluorescent Lamps to D.C.

TWO TYPES of conversion resistors, for adapting fluorescent lamps to d.c. circuits, have been announced by Clarostat Mfg. Co., Inc., 130 Clinton St., Brooklyn 2, N. Y. One is an accessory type and the other a built-in type.

The accessory type plugs between the outlet and the attachment plug. Spring contacts are utilized in the connections and a perforated metal casing is utilized unit measures 1¾ in. in diameter and ¾ in. in length. Three different ratings are available for use with 15-watt, 120-volt; 15-watt and 20-watt, 110-volt lamps.

The built-in type is a flat perforated case unit with mounting flanges, measuring 7 in. long, 1⅛ in. wide, and 1¼ in. high. It is available in a variety of resistance values to function with 15, 20, 30 and 40-watt lamps on 110 and 220-volt supply.

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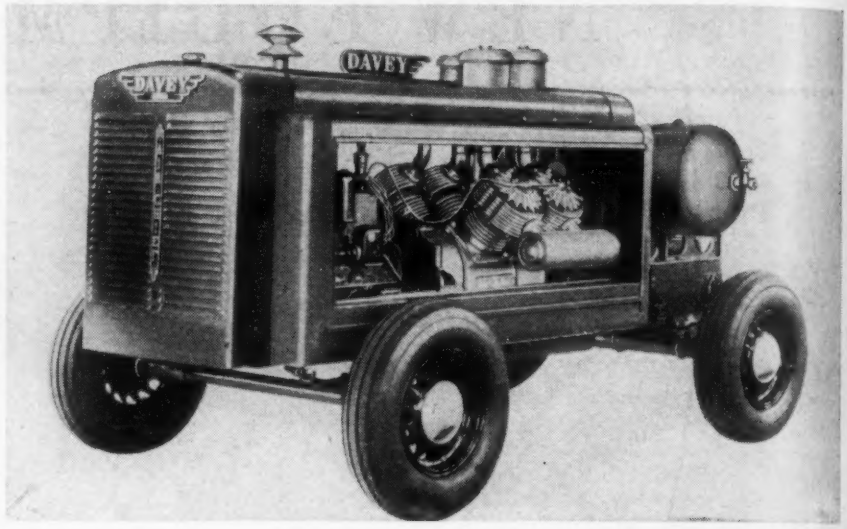
Made in Skid, Trailer Styles — New Air Compressor Model



PRODUCTION of a new V-type 160 cu. ft. portable air compressor was begun by the Davey Compressor Co., Kent, Ohio. Known as the Model 160 Air Chief, the unit is available in standard skid, steel wheel trailer and pneumatic tired trailer, mounting styles.

The compressor unit is of double V-type design, with three low pressure cylinders and one high pressure cylinder. All cylinders have 5¾-in. bore and 4-in. stroke. Overall length of the unit built as a trailer is 127 in.; height is 70 in. and width is 72¾ in. The unit weighs 4640 lbs. and has a turning radius of 35 ft.

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Electrical Symbols Cut into Triangle

A TRIANGLE containing symbols used in the power, light and control fields has been introduced by Rapidesign Inc., P. O. Box 592, Glendale, Calif. Called the Electromaster No. 175, it is made of plastic sheets, laminated to 0.08 in. thickness. Inner contours are beveled. Printing is between laminated sheets to prevent wearing or fading.

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Electric Heater Embedded in Glass

AN ELECTRIC HEATER with the various metals completely embedded in glass had been developed by Thermoletter Products, 95 Broad St., New York 4, N. Y. Standard sizes are 600 watts at 120 volts and 1200 watts at 240 volts. Larger and smaller wattage units can be supplied as specials.

Both 600 and 1200 watt units have a one-half inch nominal diameter. The immersed portion of the smaller unit is 4 inches and the larger, 7 inches. The overall length of the unit can be varied to suit mountings.

The company reports that since the heater wire is embedded in glass and rigidly held in place, it is protected from corrosion, oxidation or breakage due to expansion and contraction. The units are reported as usable to temperatures above 1600 deg. F.

Metal coatings may be applied to the units or they may be inserted into metal tubing. When the latter is done the space between the tubing and unit can be filled with lead or other suitable metal, the company reports.

The units are reported as usable for heating liquids in laboratories, hospitals, etc.; as a built-in device in molding equipment; as a infra-red radiator; and as an air heater.